BQ15

Anam

ACD-550R

BONDSTEC BT 260

CLATRONIC CD 164

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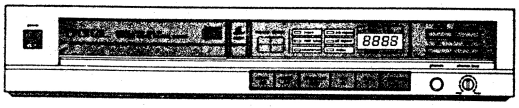
SERVICE MANUAL



COMPACT DISC PLAYER

CAUTION

⚠ Parts marked with sign are safety critical components.
They must always be replaced with identical components-
refer to the appropriate list and ensure exact replacement.

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SPECIFICATIONS

System ..... Compact disc digital audio system
Disc ..... Compact disc
Laser ..... Semiconductor laser (λ = 780 nm)
Spindle speed ..... 200 r.p.m. to 500 r.p.m. (CLV)
Scan velocity ..... 1.2—1.4 m / sec.
Error Correction ..... CIRC Double error correction system
Number of channels ..... 2 Ch.
Frequency response ..... 20-20,000 Hz ± 2 dB
Total harmonic distortion .. Less than 0.008% (1 kHz)
Channel Separation ..... More than 70 dB (1 kHz)
Wow and flutter ..... Below measurable limit
Outputs ..... Line output 2V (RMS)
Phones Outputs ..... 20mW. at 32 ohms

DISC

Track pitch ..... 1.6 um
Sampling frequency ..... 44.1 kHz
Quantization ..... EFM

GENERAL

Power Supply 220V 50Hz
Power Consumption ..... 8 Watts
Dimensions (W x H x D) ... 430 x 79 x 278 (169.29" x 31.1" x 109.45")
Weight 3.4Kg
Remote control transmitter
(W x H x D) ..... 60 x 154 x 16

1. BEFORE USING

REMOVE THE SHAKE-PROOF SCREWS

Shake-Proof Screws

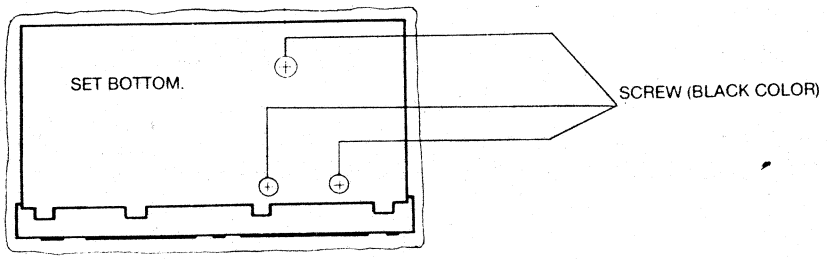
To protect the internal laser pick-up mechanism from shocks and movement in transit, it has been secured by special shake-proof screws. The positions of these screws are indicated on the player's bottom panel.

Removing the Screws

All the shake-proof screws must be removed before the player is turned on. To remove the screws, place the player upside down on a firm, smooth surface, as shown in the diagram. When removing the screws, please be careful not to damage the player cabinet. (Keep the shake-proof screws for later use)

Moving the Player

If the player is to be moved for long distance, the shake-proof screws should be installed again prior to moving. Before installing the screws, open the disc tray to make sure that there is no disc in it, then close the tray again. Turn off the player. Place the player upside down and install the screws as shown in the diagram.



PRECAUTION OF LASER DIODE

Invisible LASER radiation when open.

AVOID DIRECT EXPOSURE TO BEAM.

DISASSEMBLY INSTRUCTIONS

1. CABINET TOP COVER (15) REMOVAL

Remove 4 screws (32), 1 screw (33) and remove the cabinet

2. PANEL FRONT ASSEMBLY (3) REMOVAL

1) Remove 3 screws (37)
2) Disconnector 5 connector (WF 1,2,3,4,10) from main P.C board.

3. LED P.C. BOARD (10) REMOVAL

Remove 4 screws (36) from L.E.D P.C board.

4. MAIN P.C BOARD (14) REMOVAL

1) Remove 5 screws (29.34) from P.C board
2) Remove 2 screws (35) from panel rear

5. MECHANISM ASS'Y (17) REMOVAL

1) Remove 4 screws (31) from mechanism ass'y
2) Remove 3 screws (30) from chassis botton

MEASUREMENTS AND ADJUSTMENTS

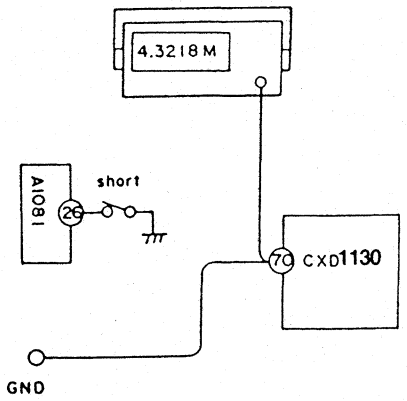
Control positions and equipment used

- Distortion analyser
- Oscilloscope
- AF Osillator
- VTVM
- Frequency Counter
- Resistor ..... 10K OHM
- Disc YEDS-18 ..... SONY

  5,5A ..... PHILI

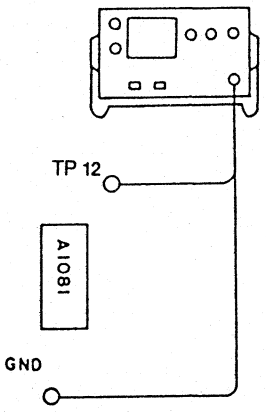
PLL ADJUSTMENT

1. Test equipment connection is shown in figure
2. Set the ground position at the pin (Condenser C110 Short)
3. Ajust VR201 for 4.3218 MHz on frequency counter reading (at stop)



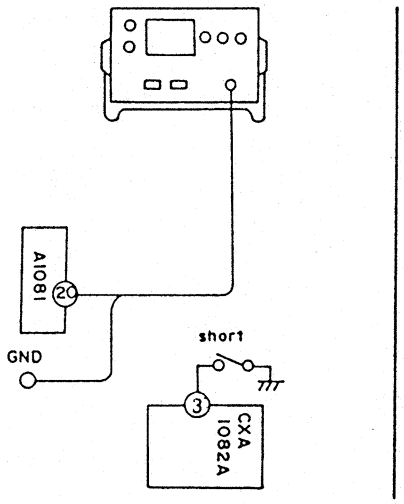
BEST EYE ADJUSTMENT

1. Test equipment connection is shown in figure
2. Play the band 5 of test disc
3. Adjust VR102 so that the eye pattern of RF Signal is widest open.



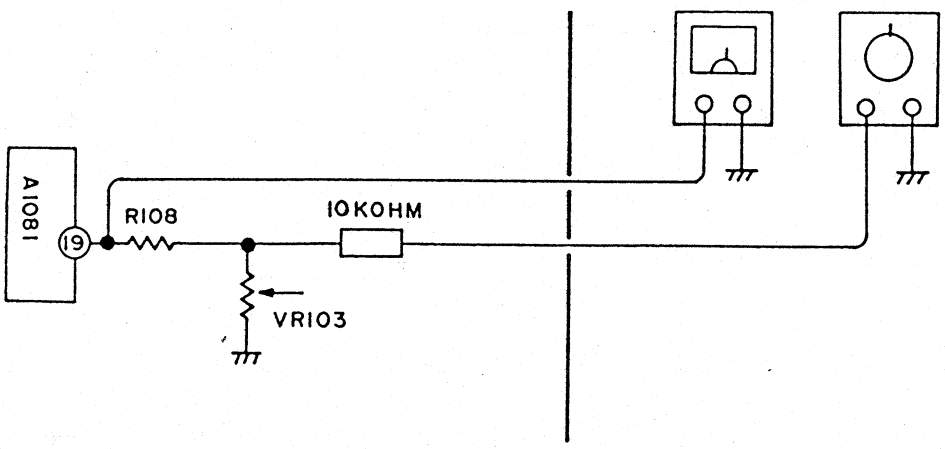
E.F BALANCE ADJUSTMENT

1. Test equipment connection is shown in figure
2. Play the band 5 of test disc
3. Set the ground position at the pin (IC 102)
4. Adjust VR101 so that center of TE Signal displayed on the oscilloscope at the pin (IC101) shall be 0 level



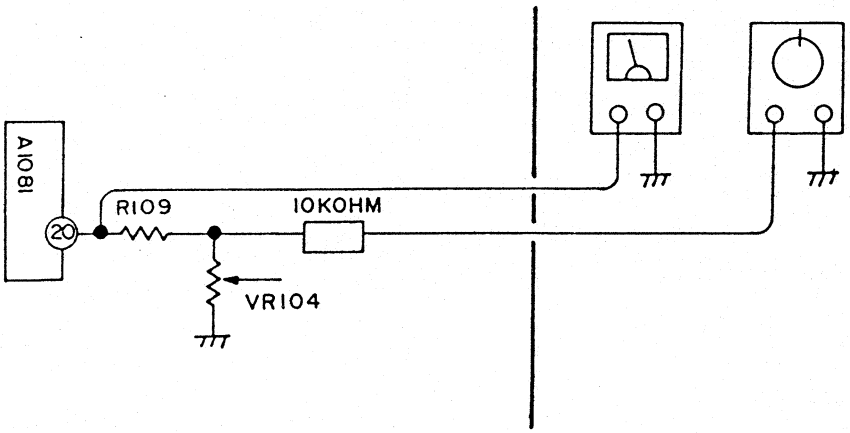
FOCUS GAIN ADJUSTMENT

1. Test equipment connection is shown in figure
2. Play the band 5 of test disc.
3. Adjust the low frequency oscillator to 1 KHz frequency and 300mV.
4. Adjust VR103 until monitor level at VTVM becomes 360mV.

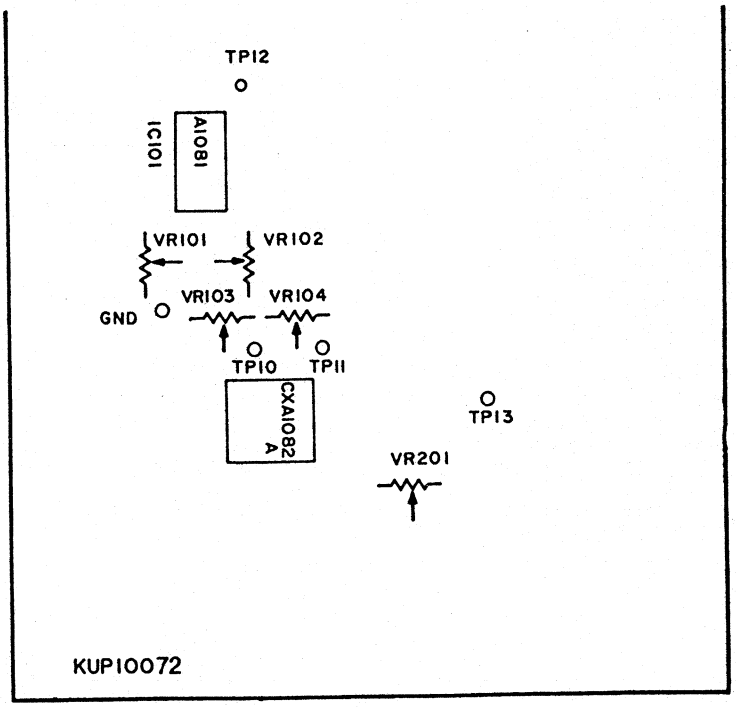


TRACKING GAIN ADJUSTMENT

1. Test equipment connection is shown in figure
2. Play the band 5 of test disc.
3. Adjust the low frequency oscillator to 1KHz frequency and 300mV.
4. Adjust VR104 until monitor level at VTVM becomes 380mV.



ADJUSTMENT POINTS



TERMINAL FUNCTION

• CXD 1130/CXD 1135 (Digital Signal Processor)

No.	Symbol	I/O	Description
1	FSW	O	Pin 1 output is switched constant when output filter of the spindle motor is energized.
2	MON	O	ON/OFF control for spindle motor.
3	MDP	O	Spindle motor drive. Provides rough control during CLV-S mode and phase control during CLV-P mode.
4	MDS	O	Spindle motor drive. Controls speed during CLV-P mode.
5	EFM	I	EFM signal from RF amplifier.
6	ASY	O	Controls slice level of the EFM signal.
7	LOCK	O	The output of pin 7 reflects the status of the GFS signal which is sampled at WFCK/16. When the GFS signal is "H", the output of pin 7 is also "H", but, when the signal has remained "L" for at least 8 samples, the output of pin 7 is "L".
8	VCOO	O	VCO output. The frequency is f = 8.6436MHz, when locked by the WFCK signal.
9	VCOI	I	VCO input.
10	TEST	I	(0V)
11	PDO	O	The output of Pin 11 provides phase comparison of EFM signal and VCO/2.
12	Vss	—	GND (0V)
13	CLK	I	Pin 13 provides serial transmission clock from the CPU. Data is latched on the leading edge of the clock.
14	XLT	I	Pin 14 provides latch input from the CPU. 8-bit shift register data (serial data received from the CPU) is latched in each of the registers.
15	DATA	I	Serial data from the CPU.
16	XRST	I	System reset ("L")
17	CNIN	I	Tracking pulse input.
18	SENS	O	Output reflecting internal condition as designated by address.
19	MUTG	I	Muting input. MUTG is "L" when ATTM of internal register A is "L" (normal condition). MUTG is "H" when muting condition is set.
20	CRCF	O	Output the results CRC check of subcode Q.
21	EXCK	I	Clock input for subcode serial output.
22	SBSO	O	Serial output of subcode.
23	SUBQ	O	Output of subcode Q.
24	SCOR	O	Output of subcode sync S0 + S1.
25	SQCK	I/O	Clock for reading subcode Q.
26	SQEX	I	Input for selecting SQCK. (See page 28.)
27	DOTX	O	Digital output (WFCK is output when DO is off or for the CXD1130Q.)
28	GFS	O	Display output for frame sync lock status.
29	DB08	I/O	Data pin for external RAM. DATA8 (MSB)
30	DB07	I/O	Data pin for external RAM. DATA7
31	DB06	I/O	Data pin for external RAM. DATA6
32	DB05	I/O	Data pin for external RAM. DATA5
33	Vdd	—	Power supply (+ 5V)
34	DB04	I/O	Data pin for external RAM. DATA4
35	DB03	I/O	Data pin for external RAM. DATA3
36	DB02	I/O	Data pin for external RAM. DATA2
37	DB01	I/O	Data pin for external RAM. DATA1 (LSB)
38	RA01	O	Output address of external RAM. ADDR01 (LSB)
39	RA02	O	Output address of external RAM. ADDR02
40	RA03	O	Output address of external RAM. ADDR03

No.	Symbol	I/O	Description
41	RA04	O	Output address of external RAM. ADDR04
42	RA05	O	Output address of external RAM. ADDR05
43	RA06	O	Output address of external RAM. ADDR06
44	RA07	O	Output address of external RAM. ADDR07
45	RA08	O	Output address of external RAM. ADDR08
46	RA09	O	Output address of external RAM. ADDR09
47	RA10	O	Output address of external RAM. ADDR10
48	RA11	O	Output address of external RAM. ADDR11 (MSB)
49	RAWE	O	Write enable output signal to external RAM. (Active when "L")
50	RACS	O	Chip select output signal to external RAM. (Active when "L".)
51	C4M	O	Divider output for crystal. f = 4.2336MHz
52	Vss	—	GND (0V)
53	XTAI	I	Input to crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
54	XIAO	O	Output from crystal oscillator circuit. Depending on the mode the frequency is either f = 8.4672 or 16.9344MHz.
55	MD1	I	Mode selection input 1.
56	MD2	I	Mode selection input 2.
57	MD3	I	Mode selection input 3.
58	SLOB	I	Code switch input for audio data output. 2's complement output when "L", offset binary output when "H".
59	PSSL	I	Code switch input for audio data output. Serial output when "L", parallel output when "H".
60	APTR	O	Control output for aperture compensation. "H" when R-ch.
61	APTL	O	Control output for aperture compensation. "H" when L-ch.
62	DA01	O	DA01 (LSB of parallel audio data) is output when PSSL = "H". C1F1 is output when PSSL = "L".
63	DA02	O	DA02 is output when PSSL = "H". C1F2 is output when PSSL = "L".
64	DA03	O	DA03 is output when PSSL = "H". C2F1 is output when PSSL = "L".
65	DA04	O	DA04 is output when PSSL = "H". C2F2 is output when PSSL = "L".
66	DA05	O	DA05 is output when PSSL = "H". C2FL is output when PSSL = "L".
67	DA06	O	DA06 is output when PSSL = "H". C2PO is output when PSSL = "L".
68	DA07	O	DA07 is out put when PSSL = "H". RFCK is output when PSSL = "L".
69	DA08	O	DA08 is output when PSSL = "H". WFCK is output when PSSL = "L".
70	DA09	O	DA09 is output when PSSL = "H". PLCK is output when PSSL = "L".
71	DA10	O	DA10 is output when PSSL = "H". UGFS is output when PSSL = "L".
72	DA11	O	DA11 is output when PSSL = "H". GTOP is output when PSSL = "L".
73	Vdd	—	Power supply (+ 5V)
74	DA12	O	DA12 is output when PSSL = "H". RAOV is output when PSSL = "L".
75	DA13	O	DA13 is output when PSSL = "H". C4LR is output when PSSL = "L".
76	DA14	O	DA14 is output when PSSL = "H". C2IO is output when PSSL = "L".
77	DA15	O	DA15 is output when PSSL = "H". C210 is output when PSSL = "L".
78	DA16	O	DA16 (MSB of parallel audio data) is output when PSSL = "H". DATA is output when PSSL = "L".
78	DA16	O	Strobe signal output. Output is 176.4kHz when DF is on. Output is 88.2kHz when DF is off or when the chip being used is CXD1125Q.
80	LRCK	O	Strobe signal output. Output is 88.2kHz when DF is on. Output is 44.1kHz when DF is off or when the chip being used is CXD1125Q.

• CXA1081M (RF Amplifier)

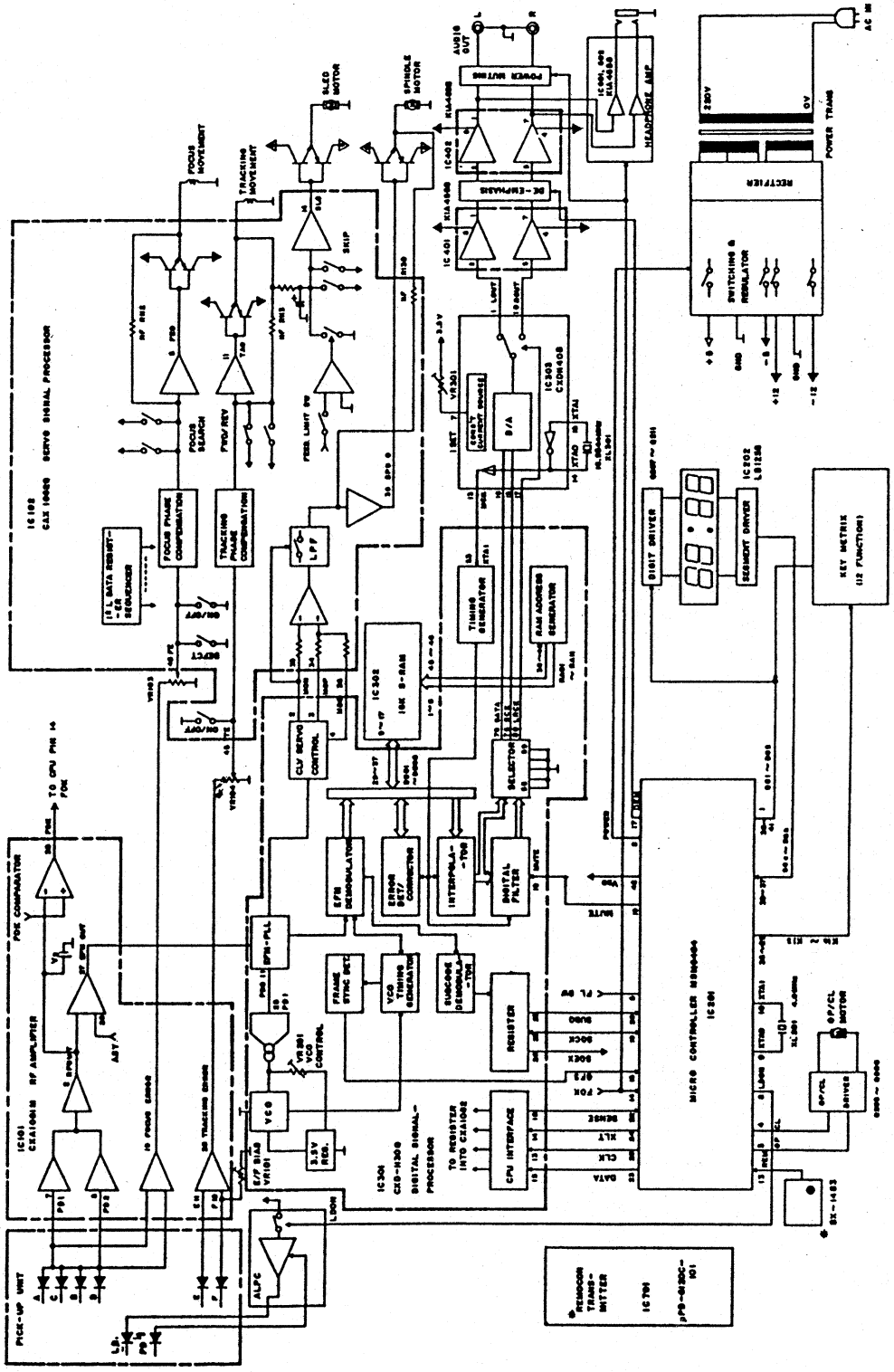
No.	Symbol	I/O	Description
1	RFI	I	Input pin with coupling capacitor where the RF summing apmplifier output is connected.
2	RFO	O	Output pin of RF summing amplifier and check point of the eye pattern.
3	RF -	I	Feedback input pin of the RF summing amplifier.
4	P/N	I	Switching pin of the LD P-sub/N-sub (DC voltage: At N-sub)
5	LD	O	Output pin of the APC LD amplifier DC voltage: At N-sub and pin 6 open
6	PD	I	Input pin of the APC PD amplifier (DC voltage: Open)
7	PD1	I	Inversion input pin of the RF I-V amplifier (1); with the pin photo diode of A and C connected
8	PD2	I	Inversion input pin of the RF I-V amplifier (2); with the pin photo diode of B and D connected
9	VC		For split power supply. GND For single power supply: VR (pin 14)
10	F	I	Inversion input pin of the F I-V amplifier; with the pin photo diodo of F connected
11	E	I	Inversion input pin of the E I-V amplifier; with the pin photo diode of E connected
12	ED	O	Output pin of the E I-V amplifier
13	EI	I	Feedback input pin of the E I-V amplifier For gain adjustment of the E I-V amplifier
20	TE	O	Output pin of the tracking error amplifier
14	VR	O	Output pin of (Vcc + V_{EE})/2 DC voltage
15	CC2	I	Input pin (with coupling capacitor) where the Defect bottom-hold output is connecting.
16	CC1	O	Output pin of the Defect bottom hold
21	DEFECT	O	Output pin of the defect comparator (DC voltage: at 10 k load)
24	CB	I	Connection pin of the Defect bottom hold capacitor
17	VEE	—	For split power supply: Negative power supply For single power supply: GND
18	FE BIAS	I	Feedback input pin of the focus error amplifier For CMR (Common Mode Rejection) adjustment of the focus error amplifier
19	FE	O	Output pin of the focus error amplifier
22	MIRR	O	Output pin of the MIRR comparator (DC voltage: at 10 k load)
23	CP	I	Feedback input pin of the MIRR comparator
25	DGND	—	For split power supply: GND For single power supply: GND (V_{EE})
26	ASY	I	Input pin of the auto asymmetry control amplifier
27	EFM	O	Output pin of the EFM comparator (DC voltage: at 10 k Ω load)
28	FOK	O	Output pin of the FOK comparator (DC voltage: at 10 k Ω load)
29	LDOK	I	Switching pin of the LD ON/OFF (DC voltage: For LD on) (DGND)
30	Vcc	—	Positive power supply

• CXA1082AQ (Servo Signal Processor)

No.	Symbol	Description
2	FGD	Connect a capacitor between this pin and pin 3 to reduce the high-frequency gain.
3	FS3	The high-frequency gain of the focus servo can be changed by switching FS3 ON or OFF.
4	FLB	Time constant external pin for rising low bandwidth of the focus servo.
5 11 14 39	FEO TAO SLO SPDLO	OP amplifier output pins for the power Transister driver.
6	FE –	Reverse input pin for the focus amplifier.
7	SRCH	Pin for providing a time constant to generate the focus search waveform.
8	TGU	Pin for providing a time constant to switch the tracking gain of high-frequency.
9	TGZ	Pin for providing a time constant to change the high-frequency tracking gain.
12	TA –	Reverse input pin for the tracking amplifier.
13	SL +	Non-reverse input pin for the sled amplifier.
15	SL –	Reverse input pin for the sled amplifier.
16	SSTOP	Pin for detecting a signal for the ON/OFF limit switch of the innermost part of the disc.
17	FSET	Pin for setting the peak frequency of the focus, tracking phase compensation and to of the CLV LPF.
18 20	SENS COUT	Output pins for interfacing with the microcomputer.
21 22 23 24 25 26	DIRCT KRST DATA XLT CLK LOCK	Input pins for interfacing with the microcomputer. 47 k pull-up resistor is inserted pins 21 and 33.
27	BW	Pin for providing a time constant for the loop filter.
28	PDI	Input pin for the CX23035/CXD1135 phase comparator output PDO.
29	ISET	Current is input, determining the peaks of focus search, track jump, and sled kick.
30	VCOF	The free-running frequency of VCO is almost proportional to the resistance value between this pin and pin 31.
32	C864	Output pin 8.64 MHz VCO.
34	MDP	Pin for connecting the CX23035/CXD1135 MDP pin.
35	MON	Pin for connecting the CX23035/CXD1135 MON pin.
36	FSW	Pin for providing an external LPF time constant of the CLV servo error signal.
38	SPDL –	Reverse input pin for the spindle drive amplifier.

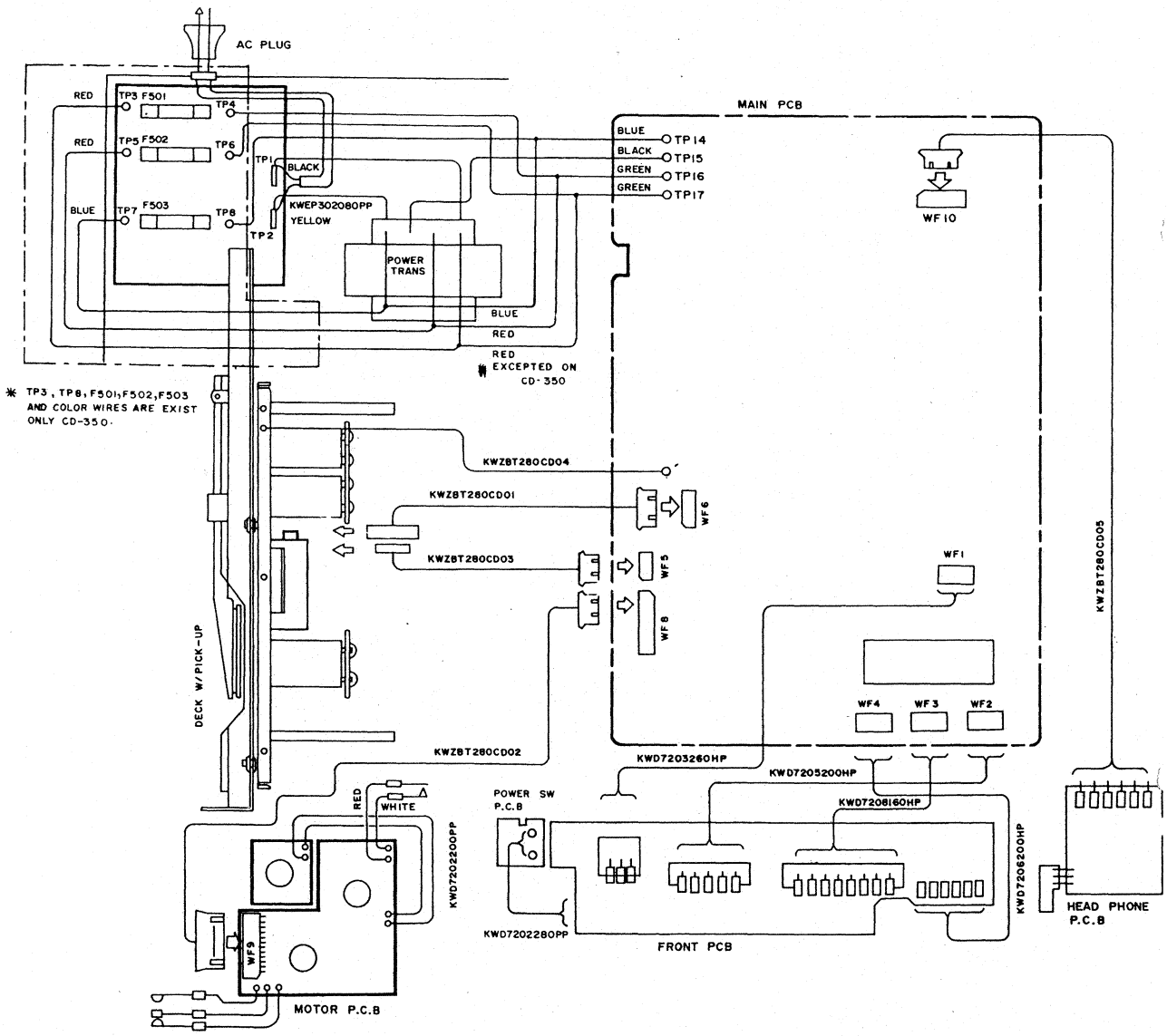
40 42 43 44	WDCK FOK MIRR DECT	Input pins for interfacing with the microcomputer.
45	TE	Input pin for tracking error signals.
46	TEC	Input pin for the zero-cross tracking comparator.
47	ATSC	Input pin of the window comparator for ATSC detection.
48	FE	Input pin for focus error signals.

BLOCK DIAGRAM

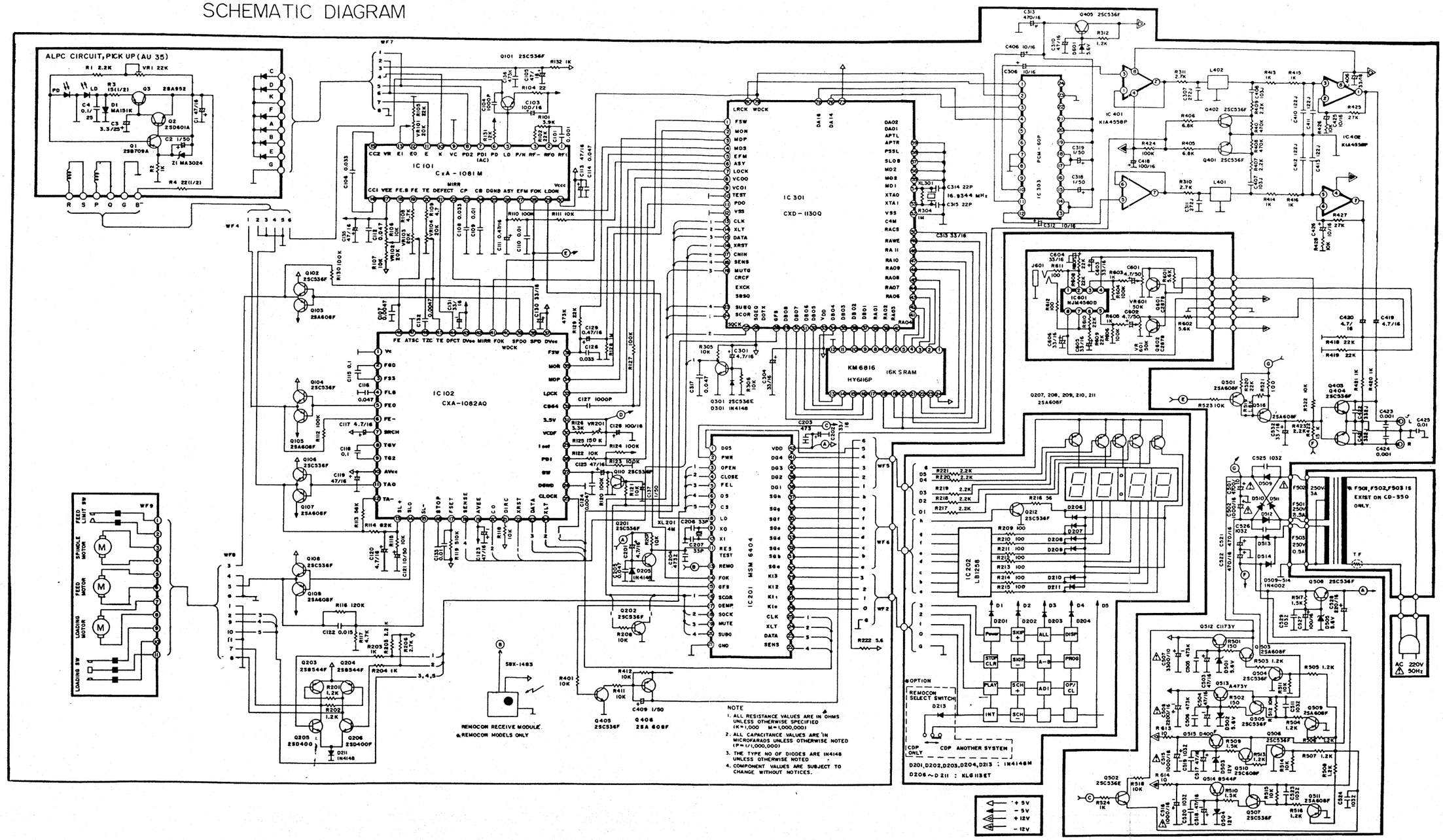


BLOCK DIAGRAM

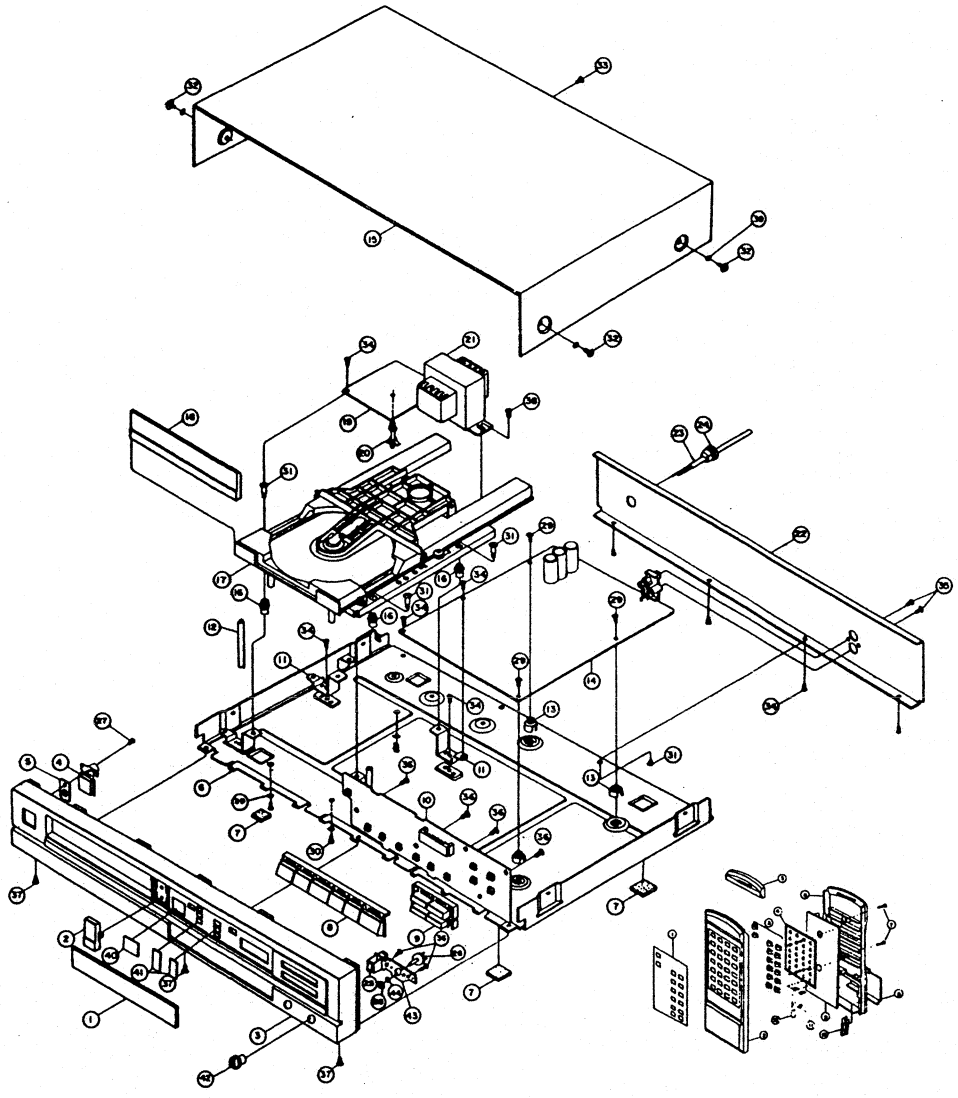
WIRING DIAGRAM



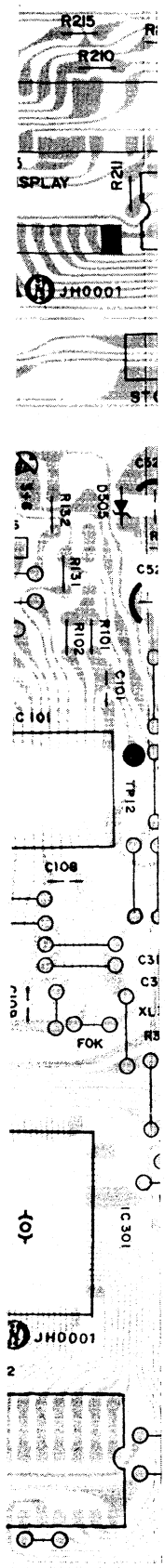
SCHEMATIC DIAGRAM



EXPLODED VIEW



No.	Cord No	Description	Q'ty	No	Cord No	Description	Q'ty	No.	Cord No	Description	Q'ty	No	Cord No.	Description	Q'ty
1	KGUAA011-28	WINDOW, LED	1	14	KUP10030A	PCB ASS'Y	1	27	KTB 3+10G	SCREW	1	40	KQUIA021	FILTER, SENSOR	1
2	KBCIA013	KNOB, OPEN	1	15	KKAIA015	CABINET	1	28	KNS8J	NUT	1	41	KMZIA007	FILTER	2
3	KGW3A021	PANEL ,FRONT	1	16	KHGIA025	CUSHION RUBBER	4	29	KTB3+12J	SCREW	3	42	KBNII83-1K	KNOB, VOLUME	1
4	KBTIA003	KNOB, TACT	1	17	BJDCM10	MECHANISM ASS'Y	1	30	KS84+6FZ	SCREW	3	43	KUCIA002	BRACKET, PHONES	1
5		POWER P.C.B. ASS'Y	1	18	KGXIA035	ORNAMENT.L.CASE	1	31	KNEIA003	SCREW, SPECIAL	4	44	KWS9	WASHER	1
6	KUAIA007Z	CHASSIS,BOTTOM	1	19		FUSE P.C.B. ASS'Y	1	32	KNE2095-2K	SCREW, SPECIAL	4				
7	KKL293	FOOT	4	20	KHR3674	SUPPORTS SPACER	1	33	KYA3+8JFZ	SCREW	1				
8	KBCIA014Z	KNOB,OPERATION	1	21	KLT5M428K	POWER TRANS	1	34	KTB3+6J	SCREW	9				
9	KBCIA015	KNOB,FUNCTION	2	22	KKFIA010	PANEL, REAR	1	35	KTB3+6JFZ	SCREW	2				
10		LED PCB ASS'Y	1	23	KJA283P	CORD, POWER	1	36	KTB3+8G	SCREW	7				
11	KUWIA019	BRACKET, MECHA.	4	24	KHR127	BUSHING, AC CORD	1	37	KTB3+8J	SCREW	3				
12	KHEIA013	SUPPORT	2	25	KJJ2E002E-R	PHONE JACK	1	38	KTB4+6J	SCREW	2				
13	KHE170	HOLDER, PCB	3	26	KVV380AA5C3G	VOLUME	1	39	KNW003	WASHER, POLY	7				



* RESISTORS AND CAPACITORS

* RESISTORS AND CAPACITORS

Notes * Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
* Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
* The unit of resistance is OHM (Ω).
K = 1000Ω . M = 1000KΩ
* The unit of capacitance is MICROFARAD (uF)
p = 10 $^{-6}$ uF

* Numbering System of Resistor

Example

KRD 25 F J 101
Type Wattage Shape Tolerance Value

Resistor Type	Wattage	Tolerance
KRD Carbon	20:1/5W	F: ± 1%
KRG: metal	25:1/4W	J: ± 5%
Oxide	50:1/2W	K: 10%
	12:1/2W	
KRF: Metal	1:1W	
Cement	2:2W	
	3:3W	

* Numbering System of Capacitor

Example

KCBS 1H 102 Z F
Type Voltage Value Tolerance Peculiarity

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
KCB: Ceramic	0J:6.3V	1H:50V DC	C:0.25pF
KCC:Ceramic	1A:10V	1:125V DC	G: + 2%
KCK: Ceramic	1C:16V	KC:400V AC	J: ± 5%
KCFRD: Semic-onduction	1E 25V		K: ± 10%
KCQI: Polyester	1H:50V		Z: ±80%, −20%
KCQP: Polypropylene	1V:35V		
KCQS: Polystyrol	22:25V		

MECHANICAL PARTS LIST

REF. NO.	PART NO.	DESORIPTION
1	KGU1A011-28	WINDOW, LED
±	KBC1A013	KNOB, OPEN
3	KGW3A021	PANEL, FRONT
4	KBT1A003	KNOB, TACT
5		POWER P.C.B. ASS'Y
6	KUA1A007Z	CHASSIS, BOTTOM
7	KKL 293	FOOT
8	KBC1A014Z	KNOB, OPERATION
9	KBC1A015	KNOB, FUNCTION
10.		LED P.C.B. ASS'Y
11.	KUW1A019	BRACKET, MECHANISM
12.	KHE1A013	SUPPORT
13.	KHE 170	HOLDER P.C.B.
14.	KUP 1O030A	PCB ASS'Y
15.	KKA1A015	CABINET
16.	KHG1A025	CUSHION RUBBER
17.	BJDCM10	MECHANISM ASS'Y
18.	KGX1A035-3C	ORNAMENT, LOCADING CASE
19.		FUSE P.C.B. ASS'Y
20.	KHR 3674	SUPPORTS SPACER
21.	KLT5M428K	POWER TRANS
22.	KKF1A010-1C	PANEL, REAR
23.	KJA283P	CORD, POWER
24.	KHR127	BUSHING, AC CORD
25.	KJJ2E002E-R	PHONE JACK
26.	KVV3801A503G	VOLUME
27.	KTB3 + 10G	SCREW
28.	KTB3 + 12J	NUT
29.	KTB3 + 12J	SCREW
30.	KSB4 + 6FZ	SCREW
31.	KNE1A003	SCREW, SPECIAL
32.	KNE2095-2K	SCREW, SPECIAL
33.	KYA3 + EJ8FZ	SCREW
34.	KTB3 + 6J	SCREW
35.	KTB3 + 6JFZ	SCREW
36.	KTB3 + 8G	SCREW
37.	KTB3 + 8J	SCREW
38.	KTB4 + 6J	SCREW
39.	KNW003	WASHER, POLY
40.	KGU1A021	FILTER, SENSOR
41.	KMZ1A007	FILTER
42.	KBN1183-1K	KNOB, VOLUME
43.	KUC1A002	BRACKET, PHONES
44.	KWS9	WASHER
45.	KSS2BO5-T	SW, SLIDE
46.	KSN2.6 + 4FZ	SCREW.

REMOCON (OPTION)

REF. NO.	PART NO.	DISCRIPTION
1	KGK 1A011	ORNAMENT, FUNCTION
2	KGW 1A015	PANEL, FRONT REMOCON
3.	KBC 1A006	KNOB, FUNCTION
4.	KHG 1A023	RUBBER, FUNCTION
5.	KGN 1A003	GRILL, DOOR
6.	KGP 1A005	BASE, BOTTOM
7.	KTS26 + 10GFZ	SCREW
8.	KKK 1A003	COVER, BATTERY
9.		REMOCON PCB ASS'Y
10.	KUS 1A007	SPRING, PLATE
11.	KUW 1A011	PLATE, CONNECTOR(B)
12.	KUW 1A010	PLATE, CONNECTOR(A)

MAIN P.C. BOARD

REF. NO.	PART NO.	DESCRIPTION
BJA2B003Z-L	CORD, POWER	
	BJDCM10A-2	MECHANISM ASS'Y
RC201	BRVBX1483	HYBRID I.C
XL201	BVFCSA400MG	OSC, CERAMIC
IC101	BVICXA1081	I.C.
IC102	BVICXA1082AQ	I.C.
IC201	BVIMSM6404	I.C.
IC202	BVILB1258	I.C.
IC301	BVICXD1130	I.C.
IC302	KVIHY6116P15	I.C.
IC301	BVIPCM60P	I.C.
IC401, 402, 601	KVIKIA4558P	I.C.
	KUP10072	P.C.B.
Q513	KVTKTA473Y	T.R
Q512	KVTKTC1173Y	T.R
Q103, 105, 107, 109	KVT2SA606NPFT	T.R
Q207, 208, 209, 210		
Q211, 406, 501, 503		
Q510, 511, 516		
Q203, 204, 514	KVT2SB544NPF	T.R
Q305, 601, 602	KVT2SC536NPF	T.R
Q101, 102, 104, 106	KVT2SC536NPFT	T.R
Q108, 110, 202, 212		
Q305, 403, 404, 405		
Q502, 504, 505, 507		
Q508, 520, 601, 602		
Q205, 206, 515	KVT2SD400NPF	T.R
VR201	KVNAA202B01A	RES, SEMI FIXED
VR101, 102, 103, 104	KVNAA203B01S	RES, SEMI FIXED
VR601	KVV3B01A503G	VOLUME
S1-S12	KSH1A06-D	SW, TACT
XL301	KVC169344	CRYSTAL
D206, 207, 208, 209	KVDKLG113ET	L.E.D.
D210, 211		
D205	KVDLC204MP	DISPLAY L.E.D.
D503, 504	KVDUZ12BZ	DIODE, ZENER
D501, 502, 505, 601	KVDUZ5.6BZ	DIODE, ZENER
D509, 510, 511, 512	KVDIN4002	DIODE
D513, 514		
D201, 202, 203, 204	KVDIN4148M	DIODE
D205, 211, 301, 213		

REF. NO.	PART NO.	DECRIPTION
	KWD7202200HP	FLAT WIRE ASS'Y
	KWD7202280PP	WIRE ASS'Y
	KWD7203260HP	FLAT WIRE ASS'Y
	KWD7205200HP	FLAT WIRE ASS'Y
	KWD7206200HP	FLAT WIRE ASS'Y
	KWD7208160HP	FLAT WIRE ASS'Y
	KWEH403070PP	WIRE
	KWZBT280CD01	WIRE ASS'Y
	KWEBT280CD02	"
	KWEBT280CD03	"
	KWEBT280CD04	"
	KWEBT280CD05	"
	KWEBT280CD06	"
J601	KJJ2E002E-R	PHONE JACK
WF1	KJP03GC2M	WAFER, ONE TOUCH
WF2	KJP05GC2M	WAFER, ONE TOUCH
WF3, 4	KUP06GA1M	WAFER
WF5	KJP06GC2M	WAFER, ONE TOUCH
WF6	KJP08GC2M	WAFER, ONE TOUCH
WF7	KJP08GA1M	WAFER
WF8	KJP11GA1M	WAFER
WF9	KJP11GB1M	WAFER
R613, 614	KRD25TJ100T	RES, CARBON
R611, 612	KRD20SJ101A	RES, CARBON
R603, 605	KRD20SJ102A	"
R411	KRD20SJ103A	"
R604, 606	KRD20SJ104A	"
R313	KRD20SJ152A	"
R607, 608, 609, 610	KRD20SJ223A	"
R601, 602	KRD20SJ562A	"
R216	KRD20SJ680A	"
R214, 215	KRD20SJ820A	"
R203, 302, 521, 611	KRD20TJ101T	"
R612		
R132, 413, 414, 415	KRD20TJ102T	"
R416, 420, 421, 524		
R525, 603, 605		
R106, 107, 115, 118	KRD20TJ103T	"
R121, 122, 207, 208		
R223, 224, 305, 306		
R401, 412, 426, 428		
R511, 512, 514, 515		
R518, 522, 523		
R110, 120, 123, 127	KRD20TJ104T	"
R130, 424, 604, 606		
R304	KRD20TJ105T	"
R201, 202, 503, 504	KRD20TS122T	"
R505, 506, 507, 508		
R513, 516		
R116,	KRD20TJ124T	"
R509, 510, 517, 519	KRD20TJ152T	"
R131, 422	KRD20TS153T	"
R407, 409	KRD20TJ181T	"
R425, 427	KRA20TJ183T	"
R104	KRD20TJ220T	"
R125	KRD20TJ154T	"

REF. NO.	PART NO.	DECRIPTION
R217, 218, 219, 220	KRD20TJ222T	RES CARBON
R221, 303, 423		
R102, 105, 418, 419	KRD20TJ223T	"
R520, 607, 608, 609		"
R610		
R126	KRD20TJ272T	"
R204	KRD20TJ331T	"
R205, 206	KRD20TJ332T	"
R101	KRD20TJ392T	"
R403, 404	KRD20TJ471T	"
R108, 109, 117	KRD20TJ472T	"
R408, 410	KRD20TJ474T	"
R601, 602	KRD20TJ562T	"
R113	KRD20TJ563T	"
R405, 406	KRD20TJ682T	"
R209, 210, 211, 212	KRD20TJ820T	"
R213		
R114	KRD20TJ823T	"
R613, 614	KRD24SJ100A	"
R111	KRD25TJ103T	"
R112, 124	KRD25TJ104T	"
R501, 502	KRD25TJ151T	"
R129	KRD25TJ223T	"
R119	KRD25TJ514T	"
R222	KRD25TJ6R8T	"
C309	KCEA1AS101B	CAP, ELECT
C209, 304	KCEA1AS471E	"
C111	KCEA1CSR47B	"
C121, 306, 425, 426	KCEA1CS100B	"
C312	KCEA1CS100E	"
C103, 128	KCEA1CS101B	"
C527	KCEA1CS101E	"
C515, 516 ⚠	KCEA1CS102E	"
C508 ⚠	KCEA1CS222E	"
C117	KCEA1CS4R7B	"
C130, 131, 201, 308	KCEA1CS330B	"
C406, 424, 532, 603		
C604		
C317, 603, 604	KCEA1CS330E	"
C507 ⚠	KCEA1CS332E	"
C201, C301	KCEA1CS4R7B	"
C105, 113, 119, 123	KCEA1CS470B	"
C135, 503, 504, 517		
C518, 605, 606		
C405, 521, 522	KCEA1CS471E	"
C501 ⚠	KCEA1CS472E	"
C418	KCEA1CU101E	"
C502 ⚠	KCEA1CU102E	"
C528	KCEA1CU221B	"
C419, 420	KCEA1EN4R7B	"
C129	KCEA1HSR47B	"
C409	KCEA1HS010E	"
C137	KCEA1HS1R0B	"
C120, 125, 601, 602	KCEA1HS4R7B	"
C601, 602	KCEA1HS4R7E	"

REF. NO.	PART NO.	DECRIPTION
C429	KCKR1H103KB	CAP. CERAMIC
C511, 519, 520, 523	KCKR1H103ZF	"
C524, 525, 526, 529		
C533	KCKR1H180KB	"
C314, C315	KCKR1H220K	"
C206, 207	KCKRIH330K	"
C112, 114, 136, 203	KCKRIH473ZF	"
C205, 208, 316, 505		
C506		
C104	KCKWIH472KB	"
C140	KCKWIH473KB	"
C127	KCQI1H102JZ3	CAP, MYLAR
C109, 110, 133	KCQI1H103JZ3	"
C115, 118	KCQI1H104JZ3	"
C122	KCQI1H153JZ3	"
C410, 412	KCQI1H182JZ3	"
C101, 307, 311	KCQI1H222JZ3	"
C421, 422	KCQI1H332JZ3	"
C106, 108, C126	KCQI1H333JZ3	"
C107, 124, 132	KCQI1H472JZ3	"
C116	KCQI1H473JZ3	"
C407, 408	KCQI1H683JZ3	"

REMOCON TRANSMITTER P.C. BOARD

REF. NO.	PART NO.	DESCRIPTION
	KUP10050Z	P.C.B.
IC701	KVIKS5803A	I.C
XL701	BSB455EBI	OSC, CERAMIC
Q701, 702	KVT2SC536NPF	T.R
D701	BVASE313	L.E.D.
D701, 702, 703	KVDIN4148M	DIODE
R701	KRD20SJ010A	RES, CARBON
R702	KRD20SJ473Z	"
C701	KCEA0JU470E	CAP, ELECT
C702, 703	KCKW1H101KB	CAP, CERAMIC

FUSE P.C. BOARD*

REF. NO.	PART NO.	DESCRIPTION
	KVP10122Z	FUSE P.C.B.
	KJT347	HOLDER, FUSE
	KJT777	FERMINAL, LUG
	KJE118	PIN. SQ
F501, F502 ⚠	KBA2C2500NRE	FUSE
F503 ⚠	KBA2C0500NRE	FUSE

* CD-350 only Only ONLY

POWER TRANSFORMER

POWER SOURCE	PART NO.
220V, 50Hz/60Hz	KLT5M002ZE-S
230V, 50Hz/60Hz.	KLT5M005ZB
100V/220V, 60Hz	KLT5M003Z-K